

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte AJAY K. GARG

Appeal No. 1996-2857
Application 08/191,737¹

ON BRIEF

Before METZ, WARREN and SPIEGEL, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

Decision on Appeal and Opinion

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 5 through 8 and 15, and refusing to allow claims 9 through 13 as amended subsequent to the final rejection, which are all of the claims in the application.²

We have carefully considered the record before us, and based thereon, find that we cannot

¹ Application for patent filed February 4, 1994. According to appellant, this application is a continuation of application 07/831,588, filed February 5, 1992, now abandoned.

² See amendment of February 4, 1994 (Paper No. 15); amendment of June 15, 1994 (Paper No. 17); and amendment of December 2, 1994 (Paper No. 19).

sustain the grounds of rejection under 35 U.S.C § 103: claims 5 through 11 and 15 are unpatentable over Markhoff-Matheny '461 taken with Cottringer '364 (answer, pages 3-5 and 7-9); claims 5 through 11 and 15 are unpatentable over Bergna '017 taken with Cottringer '364 (answer, pages 5-6 and 9-10); and claims 12 and 13 are unpatentable over Bergna '017 taken with Cottringer '364, or Markhoff-Matheny '461 taken with Cottringer '364, as applied to claims 5 through 11 and 15, and further in view of Okajima '015 (answer, pages 6-7).³

We have construed claim 15, mindful that we must give the broadest reasonable interpretation to the terms of the appealed claims consistent with appellant's specification as it would be interpreted by one of ordinary skill in this art. *In re Morris*, 127 F.3d 1048, 1054-56, 44 USPQ2d 1023, 1027-29 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). We find from the plain language of claim 1, as it would be interpreted by one of ordinary skill in this art in light of appellants' specification, that this claim encompasses processes for the production of alpha alumina particles having a silica coating which have particle widths of from about 20 to about 50 nanometers and a BET surface area of at least 50 m²/gm, which comprise *at least* the three steps specified in this claim, including the step of forming a gel containing boehmite particles with a particle size less than about 100 nanometers in which is dispersed silica *per se* in an amount that is from about 0.5 to about 5% by weight of the solids content of the gel. *See generally, Exxon Chemical Patents Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555, 35 USPQ2d 1801, 1802 (Fed. Cir. 1995) ("The claimed composition is defined as comprising - meaning containing at least - five specific ingredients."). We further find that in view of the transitional term "comprising" in the preamble of claim 15, that the gel of boehmite particles can further contain seed material, such as in the manner shown by Cottringer '364. *In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CCPA 1981) ("As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term 'comprises' permits the *inclusion* of other steps, elements, or materials."). We are not persuaded to

³ The references relied on by the examiner with respect to the grounds of rejection are listed at page 2 of the answer. We refer to these references in our opinion by the name associated therewith by the examiner.

the contrary by appellant's arguments (brief, e.g., page 6) or the testimony of Mr. Bauer in his declaration (¶ 10)⁴ in view of the open language of claim 15 and, indeed, find no disclosure in appellant's specification on which one of ordinary skill in the art would arrive at the same conclusion as appellant and Mr. Bauer. We find that the products encompassed by product claim 9 to be specified in essentially the same manner as in claim 15.

The position of the examiner with respect to Markhoff-Matheny '461, Bergna '017 and, indeed, Cottringer '364, can be summed up in his contentions that each of these references teaches the "same positive process steps as instantly claimed" and thus the "product obtained" would be "the same as instantly claimed" (answer, page 7, last paragraph, and page 10, last paragraph; see also page 4, fourth full paragraph, and page 6, fourth full paragraph). However, based on the record developed by the examiner and appellant that is before us on appeal, we fail to find in any of these references either the same positive process steps or the same product recited in the appealed claims.

With respect to Markhoff-Matheny '461, we must agree with the testimony of Ms. Markhoff-Matheny in her declaration (¶ 8) (*see supra* note 4) and with appellant's arguments (brief, e.g., pages 5 and 10-11), that mullite would not form a silica coating, as we find no evidence in the record which would provide any suggestion that the addition of mullite to a gel containing boehmite of any particle size would, under any process conditions, result in a dispersion of any amount of silica *per se* in the gel under any process conditions. Indeed, the disclosure in the specification (e.g., page 11, line 18, page 12, line 6, and page 15, line 1) as well as in Bergna '017 (e.g., col. 4, line 23, and col. 9, lines 72-73) make it clear that under certain conditions, mullite is *formed* in the claimed process.

Therefore, upon the submission of the Markhoff-Matheny declaration after final rejection, appellant had successfully rebutted the *prima facie* case of obviousness made out over the combined teachings of Markhoff-Matheny '461, and thus the examiner again had the burden of establishing a *prima facie* case if he was to continue rejecting the claims over this reference. This burden could have been maintained by advancing on the record evidence or scientific reasoning showing that silica *per se*

⁴ Appellant submitted declarations under 37 CFR § 1.132 by Mr. Ralph Bauer and by Ms. Carole J. Markhoff-Matheny on December 7, 1994 (Paper No. 23).

would indeed be provided in the process by mullite. *See generally In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

Turning now to Bergna '017, we agree with appellant (brief, page 7) that this reference does not disclose that the fibrillar boehmite used to form the gel has a particle size smaller than about 100 nanometers as specified in claim 15. We find that the examiner has not established to the contrary (answer, e.g., page 10, lines 1-3). Furthermore, as pointed out by appellant (brief, e.g., pages 7 and 14-15), Bergna '017 teaches that the intermediate alpha alumina is treated with hydrofluoric acid to remove impurities, including, *inter alia*, "aluminosilicates such as mullite," (col. 4, lines 20-33) in order to arrive at "corundum" having the properties specified at col. 4, lines 34-48, relied on by the examiner (answer, page 5), which product would *not* be a silica coated alpha alumina. We find further that Bergna '017 discloses that an intermediate alpha alumina product, that is, prior to treatment with hydrofluoric acid, prepared from a blend of fibrillar colloidal boehmite and colloidal silica will, "under optimum conditions," have a particle size of "about 75 millimicrons," that is, about 75 nanometers (col. 8, lines 35-75; see also cols. 9-10, particularly, col. 10, lines 16-62).

We find no disclosure in Cottringer '364 which would bridge the gap between Markhoff-Matheny '461 and claim 15 with respect to the issue of whether mullite would provide the requisite silica to the boehmite gel. We further find no disclosure in Cottringer which would have suggested to one of ordinary skill in this art that silica coated alpha alumina particles having the characteristics specified in claims 15 and 9 could be made by the process therein, using silica (col. 6, line 56, to col. 7, line 5). Indeed, this reference discloses the preparation of "alpha alumina particles (crystallites) of submicron size (0.2 to 0.4 micrometers)," that is, 200 to 400 nanometers (e.g., col. 2, lines 8-15, and Examples I to IX). Thus, we find no suggestion in Cottringer '364 that the teachings of either of the other two references could be modified to result in the preparation of silica coated alpha alumina particles having the characteristics specified in claims 9 and 15.

A discussion of Okajima '015 is not necessary to our decision (see brief, page 10).

Accordingly, on the record before us, it is apparent that Markhoff-Matheny '461, Bergna '017 and Cottringer '364, separately and combined, would not have motivated one of ordinary skill in this

art to prepare silica coated alpha alumina particles using a boehmite gel prepared from boehmite particles with the requisite particle size as specified in claim 15 with the reasonable expectation of arriving at silica coated alpha alumina particles having the dimensions specified in claims 9 and 15. Indeed, none of the references of record discloses or suggests a product having the particle width and BET surface area specified from the silica coated alpha alumina particles encompassed by the claims. Thus, it is manifest that the only direction to appellants' claimed invention as a whole on the record before us is supplied by appellant's own specification. *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991), citing *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988)

The examiner's decision is reversed.

Reversed

ANDREW H. METZ
Administrative Patent Judge

CHARLES F. WARREN
Administrative Patent Judge

CAROL A. SPIEGEL
Administrative Patent Judge

)
)
)
)
)
) BOARD OF PATENT
) APPEALS AND
) INTERFERENCES
)
)
)

Appeal No. 1996-2857
Application 08/191,735

David Bennett,
Norton Company
Intellectual Property Law Department
1 New Bond Street MS-412-101
Box Number 15008
Worcester, MA 01615-0008